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## HESSIAN FLY INFESTATION AT HARVEST TIME 1936

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The following information on current hessian fly conditions was obtained through surveys conducted principally by the staffs of Bureau of Entomology and Plant Quarantine field laboratories located at Manhattan and Wichita, Kans.; Lafayette, Ind.; and Carlisle, Pa. Credit for assistance in such surveys is given the Entomologists of the States of Illinois and Ohio.

As shown by the accompanying map, these surveys include the main winter-wheat regions of the Central and Eastern United States. The severity of the outbreak observed in progress of development last fall was considerably moderated by subsequent weather conditions unfavorable to fly activity. The unusually heavy late fall brood suffered considerable winter mortality. Unfavorable spring weather conditions, such as drought, sudden freezes, prolonged subnormal temperatures, and heavy rains, at critical times during the development of the spring brood combined to check the progress of the outbreak to a considerable extent. However, moderate to severe spring infestations developed throughout a rather large area extending from east-central Missouri through central and southern Illinois, widening to include most of western Indiana and narrowing again to continue across southern Indiana into southwestern Ohio (see map). Light to moderate infestations also occurred in some localities of southern Michigan, east-central Ohio, and north-central Pennsylvania. The most severely infested area included southern Illinois, southern Indiana, and southwestern Ohio. In this area most of the fields observed were injured to some extent and much fallen straw was in evidence. It is in this area that the greatest danger of serious fall infestation is apparent.

Judging from rather fragmentary evidence from Illinois, Indiana, and Ohio, the rate of mortality in the aestivating puparia due to desiccation and parasites is unusually high. Several dissections made at Lafayette during early August showed only 1 to 9 percent live puparia. Summer mortality, however, is always high and, at least in the areas of moderate to heavy spring infestation, enough flies will undoubtedly survive the summer to produce a heavy fall brood if normal or above-normal rainfall should occur

in late August and early September. The farmers in these areas should be advised to observe the safe sowing dates, plow wheat stubble under well before seeding time, and to destroy volunteer wheat wherever possible. The last two measures are more practicable than usual in the East Central States because of the death from drought of the clover stands in many wheat stubble fields.

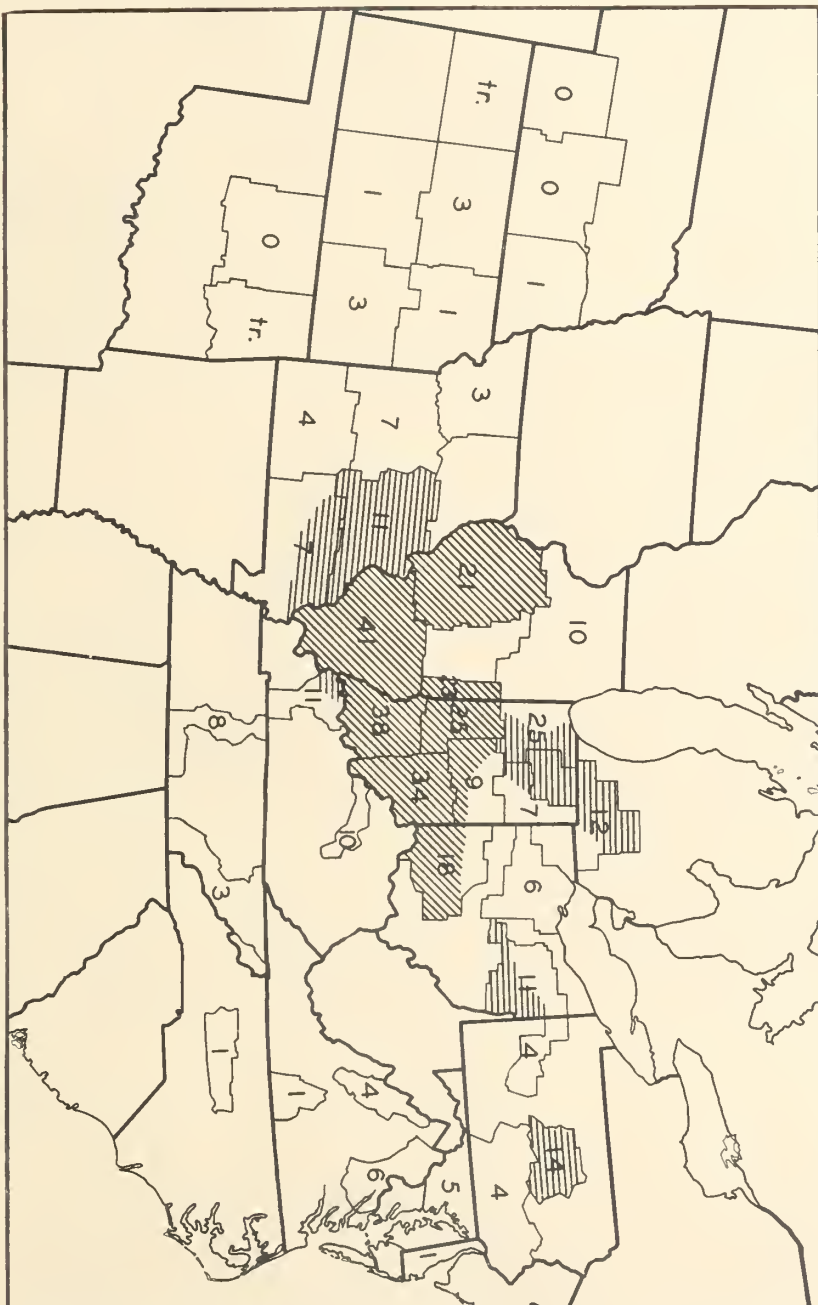
Following is a summary of the data on which this report is based.

Area	Fields Sampled Number	Stems infested		
		Average Percent	Maximum Percent	Minimum Percent
<u>Nebraska</u>				
Southwest-----	8	0	0	0
South-central-----	21	0	2	0
Southeast-----	25	1	6	0
<u>Kansas</u>				
Northwest-----	22	(1)	4	0
North-central-----	29	3	4	0
Northeast-----	45	1	8	0
South-central-----	38	1	16	0
Southeast-----	64	3	22	0
<u>Oklahoma</u>				
North-central-----	21	0	0	0
Northeast-----	31	(1)	4	0
<u>Missouri</u>				
Northwest-----	23	3	20	0
West-central-----	35	7	30	0
East-central-----	44	11	38	0
Southwest-----	33	4	36	0
Southeast-----	26	7	50	0
<u>Illinois</u> (Mostly from survey by State entomologists.)				
Northern-----	29	10	83	0
West-central-----	77	21	74	0
East-central-----	24	23	64	2
Southern-----	51	41	94	10
<u>Michigan</u>				
Southern-----	48	12	44	0
<u>Indiana</u>				
Northwestern-----	35	25	88	0
Northeastern-----	31	7	26	0
West-central-----	31	25	74	0
East-central-----	55	9	36	0
Southwestern-----	43	38	82	6
Southeastern-----	33	34	80	0

Area	Fields sampled Number		Stems infested		
			Average	Maximum	Minimum
			Percent	Percent	Percent
<u>Ohio</u> (From survey by State entomologists)					
Northwestern-----	90		6	0	0
Northeastern-----	130		11	0	0
Southwestern-----	110		18	0	0
<u>Pennsylvania</u>					
West-central-----	15		4	22	0
North-central-----	20		14	48	0
Southeastern-----	70		4	14	0
<u>Maryland</u> -----	40		5	18	0
<u>Delaware</u> -----	15		1	6	0
<u>Virginia</u>					
Northwest-----	20		4	20	0
Northeast-----	45		6	40	0
South-central-----	15		1	4	0
<u>North Carolina</u>					
Central-----	30		1	6	0



# HESIAN FLY SURVEY MADE AT HARVEST TIME 1936



Numbers indicate percentage of infestation. Horizontal crosshatching indicates areas of moderate infestation. Diagonal crosshatching indicates areas of severe infestation. tr. indicates two--less than 1 percent

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